SEQUENCE LISTING

<110> Wilkinson, Jack
      McBride, Kevin
      Bertain, Sean

<120> GENETIC CONSTRUCTS HAVING HETEROLOGOUS 3' POLYADENYLATION SIGNAL SEQUENCE
      MOTIFS THAT FUNCTION IN PLANTS

<130> 0325.210

<140> US 10/600,230
<141> 2003-06-20

<150> 60/390,529
<151> 2002-06-20

<160> 81

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 485
<212> DNA
<213> Saccharomyces cerevisiae

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cacaccttag aactaaaact taataaataa atatttctct atctttaaag gcacatatta 180
cgtggctaag gcaattacag ctgatatact gtaaaactca tgtcgccact aaattcttct 240
aacacgcgtt ctgtctcttt ccaagggact ccgaatatgc cactatttat ctgtggcatt 300
tccaatttat attcccctat tgggtatttg atgtggccgt ttaaatagtc accgattgaa 360
tcttcacttg ttcgagtttt gtcttttgct tctctaaagg tcttcaattt atctaaagca 420
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gtacc   485

<210> 2
<211> 541
<212> DNA
<213> Saccharomyces cerevisiae

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agaaacaaaa acaaaaacaa aaacaaaaac acatattgtt atgatgactg gacgaaagaa 180
agatcgtcgt tactttccta attgtttgtc ttcagtacag ttattatcag tgttctcttt 240
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ttttatgttc gttacaggat ttatagtttt tacagtatat tgacttcaat aatttctaat 360
attcagttcc tattaaattt gattattccg attagatcgg tcggcgctac caaaaagagg 420
cgaagaaaag aggaaaacgc aagtggataa aggggtgggg ggcaaaagta tttaagaaaa 480
agcgatgcga tggagagaac aaatggataa gttgcgtttc ctcgtaatat tacaaggtac 540
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<210> 3

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<211> 666
<212> DNA
<213> Saccharomyces cerevisiae

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taaaataaat atcaaaaagt ttttagcgga aggcgttaag gcagcaagta cacattcatt 180
tatctatcta tacatctata aacacaacta caatttttt agaaatggaa tttattatat 240
gaagggaaga catatagagg caacagtaca taaaggtaag aataaaagcg attttagcta 300
gtatatttct gggtatttct tacatagtct ttgtaaagca accacaccgt ttaagcttaa 360
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ggttggcgat tgtaaaatca actgagattc agtgggttgt gatttgattt gcgctattat 600
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ggtacc 666

<210> 4
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<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 4
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<210> 5
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 5
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<210> 6
<211> 33
<212> DNA
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<220>
<223> PCR primer

<400> 6
gcgcgcaagt cacaagtagt agcgagttac aac 33

<210> 7
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
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<223> PCR primer

<400> 7
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<210> 8
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 8
gcgcgccatc caagagattg tctttgtctg caag   34

<210> 9
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 9
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<210> 10
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 10
ggcgcgccta ggccaagccc tgcgtccagc gagc   34

<210> 11
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 11
cggggtaccc cgagtcagct tgtgcaacag cgtcg   35

<210> 12
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Mutagenic Oligonucleotide

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<210> 13
<211> 44
<212> DNA
<213> Artificial Sequence


<220>
<223> PCR primer


<400> 13
ggagtgttgt acaaaaaaga attcagtcat aaaatgtata ttac                        44


<210> 14
<211> 44
<212> DNA
<213> Artificial Sequence


<220>
<223> Mutagenic oligonucleotide


<400> 14
ggagtgttgt acaaaaaaga attcagtcat aaaatgtata ttac                        44


<210> 15
<211> 27
<212> DNA
<213> Artificial Sequence


<220>
<223> Mutagenic Oligonucleotide


<400> 15
aattcacaca cacacaaaca cacacag                                           27


<210> 16
<211> 510
<212> DNA
<213> Saccharomyces cerevisiae


<400> 16
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cattttgata ttttgattaa ttaagtggta atcttaagct catatacaaa aagggaagga  120
aaaaaaataa agatagaaaa gatcttagga acggatagag gtttgaaaaa ggaataacag  180
gtaattttc attttcatat cggttgtaac attataaagc tcacaaattt aaaacaaaaa  240
aaaacataaa cctaacaagg ttaatcattt gcacatgatc tcatcatata gatcaattca  300
taatctatat aataatgaat aattagaata aaaatttcct cttgtctcag aacgcccatc  360
ggatggcata actttagtta atgatatcac gacggacgaa gtattgaaag acaacctaac  420
ctgttcatca atttaaaagt caacgcagaa actataatac attgccacat agttctttcc  480
gatatgaaca acctaactca caaaatttac                                    510


<210> 17
<211> 877
<212> DNA
<213> Saccharomyces cerevisiae
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<400> 17
attaatggat gccttcaatg agttccacga cgcacgttta tttttttcgac tgagaatccc 60
tcagcaaata taatctattt tttatatatc tgtgtatatg taagcatgta taactagtta 120
caaatatgat aactgctttg gcgatcactt cattttcttg agaggggtac tcagtagccg 180
ccaagcacga aatgtccgtt attaaaaatt ggggagtgaa tcttaaaagc ccgaaaagga 240
aattcaaaat ctgtctattt ataggccgtc gcgctctacg aaaacgcgaa attattcaaa 300
cggaaaacgg aaaaaaatct aaaaaaagaa attaattgag agatctcacg gaaatgccgc 360
gaggaatgtt tctcgaggct gagcggcgtg gtctgtgcaa aaaaatggca attttttttgt 420
aggagtttgc attgggccat tcagaaggag caccgttaga tgggatggta aatgaatttg 480
ctgtttcaga tttgaatcaa tctttacccg ttatttttgc cgtttttgctt tcataatctg 540
caaattaaca aagtcataaa gaacataaag acatcacccc agtttttaca ctctttttttc 600
ctgtgtttgg tttagcacaa ctttccaata accaagttgg tttcagatca tccccatatt 660
attttctagt ttcatttact taccaaactc accattcaag ctttcaaat taagttacga 720
gtacagtgga ccattttttt ctgattcttc atattttccg ttataagtct tataaggaag 780
gtatacattt atattgcgaa tttgaaaaat aatttaaagc tgactttgcg ttttaggtag 840
gctagaaaag aatacaacta tccctaaaca cattcta 877

<210> 18
<211> 669
<212> DNA
<213> Saccharomyces cerevisiae

<400> 18
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ccttctatat attatttctc taacagctat gttaacatga ttgcctttgt ttatctacta 180
aaggaccctt ctactttatc taccatacgc ctatattttc tctgtgtttc aatcatatcg 240
agaaaaattt ggtacttcgt gtctaaaaga attctatctg gatgagtttt ctcatttgga 300
ttgacaattc ttgcattacc cgttagctct tgcataactt tccatagaaa acttgtcccg 360
ttatatcttc cctctcctag gctctcctgt cccacggtca atgaagcatc cttactactt 420
tcctcagagg ttttgtcaag tggttgttgt gtgcaaatcg gaagagaata gttatttatt 480
ttggcaggcg cacttggagt tgaaagttgt agattatgtg gggatacaaa gccatttgtc 540
gagtttcgat cttccattga taactttttgt atcgacgaat atgaatcgtt aaaacgttcc 600
gtctttgtct gagaagattt ttggcctttg agagttcttt tttccctggt ataatcaaaa 660
tcttcactt 669

<210> 19
<211> 443
<212> DNA
<213> Saccharomyces cerevisiae

<400> 19
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tttgtataca tcacgatttt tttactacat atatatttcc ttttctattc tatttgtaaa 120
tgggaggaaa tcttaatatg gacctctctt cacaaattgt tctataatac aatatatatc 180
aagatataat aacaagtcat ttgagataat ggtatgcaaa tacgcgaaat aagagtaaac 240
ggatacagtg agcctgaaga ggacaagctg cttccatgtt gtagtgttta gatatatgag 300
cttaaaattt agatttactg aatattatac aatagtaatt atacataaag aaattccatt 360
ttatctgttc gatagcaatg gaagaggaga gagttctgtg aaacaaataa cagcagcaca 420
gaaaactccc gtcaacgtaa tat 443

<210> 20
<211> 427
<212> DNA
<213> Saccharomyces cerevisiae

<400> 20

- 5 -

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tttgataaat  actccataga  acactaaata  aattgttcaa  ctgtgttatt  gtctttattc  180
atgttggttt  tcaagagctt  ggattttgaa  tcgtcttata  ctatgacgtt  cactattttc  240
gcgaacccgg  gtaataccat  tagctatttt  gatagaaagg  gatttttatt  agggaatata  300
accacattta  aagtgtccta  tcatgtttca  atctccagta  aacgcacata  agccgaccaa  360
ttgagtcaac  cttttaactc  tatttaattt  gatacggata  gaatattgtg  actaccaaaa  420
gggaaaa                                                                  427


<210> 21
<211> 810
<212> DNA
<213> Saccharomyces cerevisiae


<400> 21
taagtgtcat  tccgtctaca  aggttaacgc  ttaagtaaag  tatttttaaa  acttatatat  60
tttaattgat  cgttaaattt  tgaaaaaggc  ttttaatatt  gtcattattt  acttttctat  120
ttacaacaaa  agaacaaatg  aatagataga  cagtagagga  atataagtag  tatgcagtgc  180
catgcgggat  caaggaattt  gtatctctaa  ttttcgtggt  tgtatgcgtc  tctaaacaag  240
tcaatatttt  gctgtaagat  ggttctgccg  ctcctttcag  ttcctttaag  aagcgtacct  300
gcagatattt  taacatcctc  catggtttca  ttgactttac  tgacaagttg  attgctcaag  360
tcatcaacat  gttttttccca  attttcacta  aatacttgca  aaacagcatc  gaatcccatt  420
ttacccttttt  tagcgttctc  gcaaaacctt  tgaactgacc  aatcttccat  cttattacac  480
agctttctaa  tggatccata  tgctgtaatt  tgggcttcct  gctggaaaag  tgtttttatta  540
gccgagtcat  cgggatgcgg  gctatatgtt  acagtttcgt  agactttttaa  tagattgcac  600
atcgttaaat  tacagcttct  catggtcaag  ctctttttat  ttaagtctac  cacagaaact  660
tctctgacat  gactcatatt  ggtccctcct  agcatcatca  tgatccattt  gggaacacct  720
tgttttacag  taatcaaccg  ttcagtaact  aagaccttac  cttgatcctt  caattctctt  780
cttaaaacgt  ccactgcgat  gacatgtgta                                      810


<210> 22
<211> 763
<212> DNA
<213> Saccharomyces cerevisiae


<400> 22
tgatatagta  tatcatcctt  acgtatttga  cgttattaca  ttatatatag  tttctcaaat  60
aatatttcta  gtttatttttt  gtatcataat  aaaaacgtat  accaaatata  ccattatttt  120
tcataacatt  atggtaggga  tagggaatca  agtaactaat  ttatatccgc  agagcattgg  180
gaaaaccaac  ggcgctagta  aatgcattta  aattacgtcc  gtccaacttc  taagcttcaa  240
tggtagactc  ttaactctga  cctttttagc  aattaagctc  ttgaagatat  caaaagtgtt  300
accgtccggc  tgtaaattat  aaacgtttcc  tgtaaattga  gtggaatacc  gcttaccatt  360
cttttgcaat  cagtaaaccg  tagtcttccg  tgataccagt  aatcatggct  tgcgtatttc  420
cgtgatctgg  taatgttact  atttggttac  tatgtaacac  aactcataat  aacttggcaa  480
tatttccgca  gctccgtagt  taataaactg  ttttaatatg  acctcaaggt  tattcatata  540
gagtgcctgc  agtttttctg  cctttattgc  tggcaataaa  tcaaggtgta  attgttggcg  600
ttcttcattc  aggatatcaa  tccaagtttg  taatgaagtt  gtaggaccat  cactagtcaa  660
atttatacca  cagccaagta  gcaaacaata  tttattgttt  atgaagtggg  tattaactaa  720
taaaccagag  atcttaagat  aagcgggctc  gatatcacct  aag                     763


<210> 23
<211> 498
<212> DNA
<213> Saccharomyces cerevisiae


<400> 23
tgatgcttac  gtttcttctg  acgaagaatt  ctaatctttt  tgatcactgc  tttcacagtt  60
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ttctttaaga tttttattga tcaataattt atgtatattt taatttctat gttttgtaa 120
tattgtttat tttggtaaaa tatagacgca acttccttat tataaagaaa ggcattattt 180
aaaagaaaaa gcgttccatt agtcagacat cttttttttt catacattct taagctcagg 240
caaattgagc attgcctcat acccttttcg gtaagagggt aacgaaaata ttttttttgga 300
agaataaaaa taggtgacgg atcatagact aggaagcttt aaaacatgat tgagcgtaat 360
attatattcc ttctagaaaa gataaaagag ccaagaccta aaattttttc atccctgttc 420
tattaaaatt gtggaaatga ggttttttgag gggatttgta ttttctttgg ctttcactct 480
atataaagta actgccac                                               498
```

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<210> 24
<211> 492
<212> DNA
<213> Pichia pastoris
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<400> 24
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gtcttgctag attctaatca agaggatgtc agaatgccat ttgcctgaga gatgcaggct 120
tcattttttga tactttttta tttgtaacct atatagtata ggattttttt tgtcattttg 180
tttcttctcg tacgagcttg ctcctgatca gcctatctcg cagctgatga atatcttgtg 240
gtaggggttt gggaaaatca ttcgagtttg atgttttttct tggtatttcc cactcctctt 300
cagagtacag aagattaagt gagaccttcg tttgtgcgga tcccccacac accatagctt 360
caaaatgttt ctactccttt tttactcttc cagattttct cggactccgc gcatcgccgt 420
accacttcaa aacacccaag cacagcatac taaattttcc ctctttcttc ctctagggtg 480
tcgttaatta cc                                                     492
```

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<210> 25
<211> 876
<212> DNA
<213> Pichia pastoris
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<400> 25
tctaaagagt agcaattctg atgaggggct gagatatctc agcactttgt catactcact 60
tcaaacccct gtattatcaa aaagtttctc gatgccgggg cggctaaggc tcaagtctag 120
tcagccgtgg tatcttctga actgcatcac gagtttttatg cgagcattag tacggcgttc 180
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acttaacata taaaataaaa agtggatgag atctttcttt cgccgtttag gtcttaaaag 540
ccagtttgcg tcttaaagcc agtttgcgaa tataaatgtt cgtataagga tgaatcgtat 600
tcaaagaatt aaattgtcag aaaaactact gatgctcgca taagacatgt gatgcagtcg 660
aagatacgca tgcatataca tatatacact agctaacatc cacccaatat atatatccct 720
ctccgtttat ctatttcaca cacataccaa aagctggttt tatccgtcag acctacaacg 780
cactctcccg cttcgctttc tgccccttcg ccaactcatc caaaagcagc agccgcttat 840
cccctgaacg acttccatcc tctgttccgt caaagt                           876
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<210> 26
<211> 577
<212> DNA
<213> Pichia pastoris
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<400> 26
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gcctgtgtct cgtgtccaga ccccgcgcgt ccttggctgt agtctctgta cgtatggttt 180
tgcatttacg gccagctggt atctggcttt ttggagttac tttttgggat ttggaaagaa 240
```

- 7 -

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ctacacagct tgttgcctgg agcgatgcct tggacaacaa acaggaaaat cgacggaaag 300
gatgcaataa tggacgggaa gtttagagtc cttgcattgg aggcgggcat aggcagccct 360
ggaatacaga accctgtaga gttaaggagt gtaaacaccc gacacagtat ataccaggcc 420
cctttgtctc agggcacgag ccagggggcct atagagcgat aaaaccatgc gactattgat 480
aataatgata accagcagcg catagcccag tacgaggcct tgacgtcaag gtcagtttct 540
gcagaacaat cgcattatcg aatccatgga atgcact 577

<210> 27
<211> 650
<212> DNA
<213> Pichia pastoris

<400> 27
atcgtccacc gcaagtgctt ctaaggtatg agtcgcaaaa ttgttttta ttttggtct 60
tgagtctaat atgctcgcag ctcttgagtt gtatatggtc gttggtcgcg tattttctgt 120
tgtattaaaa gatcaaacga gatcaaggga tggctcgcgg gctgtctctc gcactaggag 180
gaagaatgcc tgaaaaagga actttgattt tagctgtgga atagagatgg cttgtttgag 240
gacgcttgtc gcttggcgca gggacttgaa tggcagcttg tggaaaccga aggcgagaaa 300
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tcttcgagaa gcgactgcag ggattgttgg ttctgtggag ctgatgagcg cgccttgacc 480
acccttgttc ttgttttgct cttttgttct catttaaccc gtttctccct tccaacccttt 540
tgaccttgca acattgtctc ccagcgcgtt gccaaagcga acttgatatc agtatagtat 600
gaccaagtag tctaccaaaa taaattttag tacagtattg ctagtataca 650

<210> 28
<211> 412
<212> DNA
<213> Homo sapiens

<400> 28
ccaagccctg cgtccagcga gcgtcacagc acaacctgca aaaacggagc tgggctgcag 60
ctggggctgg catggacttt catttcagag attcggtttt taagaagatg catgcctagc 120
gtgttctttt tttttttccaa tgatttgtaa tatacatttt atgactggaa actttttttgt 180
acaacactcc aataaacatt ttgatttag gttctgcctc tgagtttatt cctgaggggga 240
agctcgagcc gggcctctgc cctaatgaag cggatgtcta agaaagatcc ctccacccccc 300
aaggaaaaag gtcactggct agtgtagcta gtgtaaacag gacccaggcg atgcatggga 360
ccctgcccctt tttttttctag tgagcctccg acgctgttgc acaagctgac tc 412

<210> 29
<211> 308
<212> DNA
<213> Homo sapiens

<400> 29
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ccgcctgcag cctcttccaa gccctgcgtc cagcgagcgt cacagcacaa cctgcaaaaa 120
cggagctggg ctgcagctgg ggctggcatg gactttcatt tcagagattc ggttttaag 180
aagatgcatg cctagcgtgt tctttttttt ttccaatgat ttgtaatata cattttatga 240
ctggaaactt ttttgtacaa cactccaata aacatttga ttttaggttc tgcctctgag 300
tttattcc 308

<210> 30
<211> 363
<212> DNA
<213> Homo sapiens
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<400> 30
ctagccatgg ccactgagcc ctctgctgcc ctgccagaat ctgccgcccc tccatcttct 60
acctctgaat ggccaccctt agaccctgtg atccatcctc tctcctagct gagtaaatcc 120
gggtctctag gatgccagag gcagcgcaca caagctggga aatcctcagg gctcctacca 180
gcaggactgc ctcgctgccc cacctcccgc tccttggcct gtccccagat tccttccctg 240
gttgacttga ctcatgcttg tttcactttc acatggaatt tcccagttat gaaattaata 300
aaaatcaatg gtttccacat ctctcagtgc ctctatctgg aggccaggta gggctggcct 360
tgg   363

<210> 31
<211> 341
<212> DNA
<213> Homo sapiens

<400> 31
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atagccattt gccccaactt aagtttagaa attacaagtt tcagtaatag ctgaacctgt 120
tcaaaatgtt aataaaggtt tcgttgcatg gtagcatact tggtgttttg tcatgaaatt 180
ctctagtgat gtgtgggtac gcttaaaact ggtgaaaatg tttagggatt taattttgag 240
attggtaatg tgctcaaagt taagtcactt gactttggta tacacttggg tgggctgagg 300
ggcaagagcc ttctttgctg tttaagtcat tacaagttag g   341

<210> 32
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 32
cctaggtgaa gaagagtgac tgaattttg   29

<210> 33
<211> 28
<212> DNA
<213> Artificial Sequence

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- 20 -

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- 21 -
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